

Promoting Clear Identification of Diabetic Peripheral Neuropathy

ICD-9-CM Coordination and
Maintenance Committee Meeting

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Edward J. Bastyr III, MD

Overview

- Clinical Manifestations and Diagnosis of Diabetic Peripheral Neuropathy
- Disease Epidemiology
- Inadequacy of Current Diagnostic Codes
- Proposed Modifications and Clarification
- Discussion

Diabetic Peripheral Neuropathy

- Diabetic peripheral neuropathy (DPN) is a frequent complication of diabetes associated with significant morbidity and mortality¹
 - Risk factor for ulcers and amputations²
 - Impairs quality of life¹
- Significant resources are spent to treat patients with DPN
 - Estimated total annual cost in US \$4.6 - \$13.7 billion³
- Only effective intervention is prevention by tight control of patient's diabetes

1. Vinik AI, et.al. *Diabetologia* 2000;43: 957-973.

2. Standards of Medical Care in Diabetes. *Diabetes Care*. 2004;S1:15-35.

3. Gordo A, et.al. *Diabetes Care*. 2003;26: 1790-1795

Clinical Manifestations

DPN affects the limbs symmetrically and progresses from distal to proximal over time.

- **DPN is characterized by a stocking and glove distribution:**
 - Bilateral symmetrical distribution of signs and symptoms
 - Affects lower limbs first
 - Progresses from distal (toes) to proximal (knee) over time.



Signs and symptoms progress from distal to proximal over time

Diagnosis

- Symptoms
 - Numbness
 - Tingling
 - Painful Sensations
- Signs
 - Lost Reflexes, Decreased Sensation
 - Joint Deformity, Skin changes
- Perception Measures
 - Quantitative Sensory Testing
 - Vibration Detection Threshold
 - Cold Detection Threshold
 - Heat Pain Threshold
- Objective Measures
 - Electrophysiology (Nerve Conduction Studies)

Epidemiology

Reliable epidemiological information is complicated by differences in: Definition; Methodology and Diagnostic Criteria

<u>Study Population</u>	<u>Data Collection</u>	<u>Prevalence (%)</u>
Rochester Diabetic Neuropathy Study*	1986	54% - Type I 45% - Type II
San Luis Valley Diabetes Study†	1984 – 1986	25.8%
Pittsburgh Epidemiology of Diabetes Complications Study‡	1984 – 1988	34.0%

DPN diagnosed on basis of: *Positive symptoms and electrophysiological testing¹;

† Neurological exam²

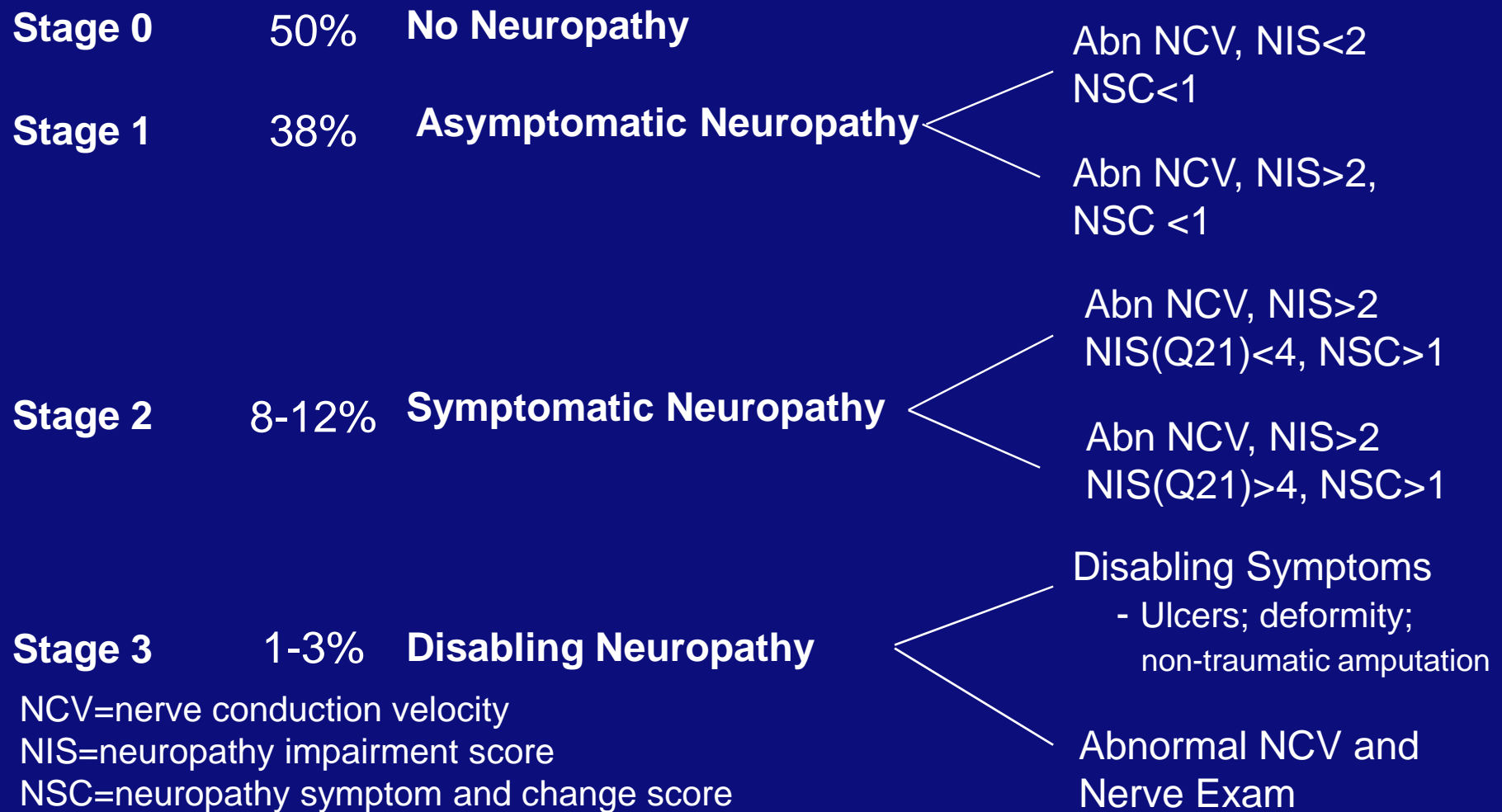
‡ Presence of two out of three: abnormal sensory or motor signs, symptoms, decreased tendon reflexes³

1. Dyck PJ, et.al. *Neurology*. 1993;43: 817-24.

2. Franklin GM, et.al. *Am J Epidemiol* 1990;131:633-43.

3. Maser RE, et.al. *Diabetes* 1989;38(11):1456-61.

Neuropathy Clinical Classification



Inadequacy of Existing Codes

Diabetic Polyneuropathy (357.2)

- Poorly defined epidemiology due to variations in diagnosis criteria
- DPN is a progressive disorder, current code does not allow for following disease progression
- Lack of unique codes results in the loss of valuable information
 - Epidemiology
 - Morbidity
 - Utilization of services and costs

Modification to Diabetic Polyneuropathy

- Maintain 357.2 *Polyneuropathy in Diabetes*, but require that it coded to 5th digit
- Continue to note under 357.2 *code first underlying disease* (250.6)
- Create four unique codes to describe the different stages of Diabetic Peripheral Neuropathy

357.20 *Unspecified Polyneuropathy in Diabetes*

357.21 *Asymptomatic Neuropathy in Diabetes*

357.22 *Symptomatic Neuropathy in Diabetes*

357.23 *Disabling Neuropathy in Diabetes*

Conclusion

- DPN is a frequent, progressive complication of diabetes associated with significant morbidity and costs
- Current ICD-9-CM codes do not allow for categorization of the different stages of DPN resulting in the loss of valuable information on the epidemiology and costs of the disease
- Modification of current *Polyneuropathy in Diabetes* (357.2) code will better represent the clinical presentation of DPN
 - 357.20 *Unspecified Polyneuropathy in Diabetes*
 - 357.21 *Asymptomatic Neuropathy in Diabetes*
 - 357.22 *Symptomatic Neuropathy in Diabetes*
 - 357.23 *Disabling Neuropathy in Diabetes*
